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American Indians are, as usual, classed as Mongols. For a German textbook, however, the work is a vast stride in advance.

The Origin of Sacred Numbers. D. G. BRINTON. Amer. Anthrop., Vol. VII (1894), pp. 168-173.

In this brief paper the author deals with "holy or sacred numbers as observed in the early civilizations, and among tribes living in what we call primitive conditions." His conclusions are: (1) The sacred numbers are preëminently 3 and 4, or derived from these; (2) these numbers represent contrasting or antithetic symbolic notions, and arise from wholly opposite mental perceptions; (3) the number 3 derives its sacredness from abstract subjective operations of the intelligence, and has its main application in the imaginary and non-phenomenal world;
(4) the number 4 derives its sacredness from concrete and material relations from external perceptions, and has its application in the objective and phenomenal world; (5) the associations which attach sacredness to these numbers arise in the human mind of the same character everywhere and at all times, so that no theory of borrowing is needed to explain identities or similarities in this respect; (6) ethnic character, however, tends potently to develop especially the one or the other, either the abstract symbolism or the 3 and its derivatives, or the concrete symbolism of the 4 and its derivatives; and conversely the preponderant development of the one or the other of these reveals, with instructive precision, the ethnic character of tribes and nations. In the "three series," we have the various trinities of time, space, position; creation, preservation, destruction; birth, life, death; three worlds; divine triads—the trinities of Buddhism, Christianity, etc. Derived from 3 are 9 and 33, numbers of significance in Teutonic and Hindu mythology. In the "four series"—derived directly from the relations of the human body to the external world about it—we have the four cardinal points, Ianus, the four-faced Roman year-god, and the worldwide occurrence of the number four in myth, ritual and ceremony. Derived from 4 are the numbers 7 and 13, sacred or tabu'd numbers in many lands and among many peoples—the 7 planets; the 7 "ancient spaces" of the Zuñi Indians; the 7 caves of Aztec legend, etc.; the 13 islands of which the earth consists according to Hindu cosmogony; the 13 months of the North Asiatic and primitive Aryan solar year, etc.

As to ethnic facts, Dr. Brinton states that "the American and Mongolian races revere almost exclusively the "four series," for which also the ancient Babylonians had a decided preference; while triads and trilogies are Egyptian and Greek, Teutonic, Keltic, Slavonic, Indic. Dr. Brinton's paper is another valuable addition to the literature of anthropologic psychology.

A Primer of Mayan Hieroglyphics. D. G. BRINTON. (Publications of the University of Pennsylvania; Series in Philology, Literature and Archæology, Vol. III, No. 2), Boston, 1895, VI, 9-152. pp. 80.

The object of this primer is "with the greatest brevity to supply the learner with the elements necessary for a study of the native hieroglyphic writing of Central America," and Dr. Brinton is of all students of this, the problem of American archæology and linguistics, best qualified to perform such a task, combining as he does a terse and vigorous style with a directness of thought, and an instinctive grasp of the essentials of the subject under discussion, that are not often found among those who have treated of this crux of Americanists, the graphic system of the Mayas and their congeners in ancient Central America. After a brief introduction concerned with the general character of the Mayan hierophyphics, the manuscripts and the various theories of interpretation, "alphabets" and "keys," that have been put forth from time to

time, since the effort of Bishop Landa, in 1570, the author proceeds to discuss "the mathematical elements" (pp. 18-36)—numeral system, rhetorical and symbolical use of numbers, methods of counting time, the ritual calendar, the astronomical knowledge of the ancient Mayas; "the pictorial elements" (pp. 37-77)—religion and cosmogony, pictorial representations of divinities, quadrupeds, birds, reptiles, occupations and ceremonies; "the graphic elements" (pp. 78-126)—the direction in which the glyphs are to be read, the composition of the glyphs, analysis of various graphic elements, hieroglyphs of the days, months, deities. The fifth and last section of the book is devoted to reproduction of some seventeen specimens of Central American hieroglyphic texts with appropriate comments and explanations. There are three indexes: (1) Index-vocabulary of Maya words; (2) index of authors; (3) general index; and the typography and general get-up of the work are beyond reproach and worthy of the æsthetic subject with which it deals. As an interpreter of these hieroglyphics, Dr. Brinton takes a position intermediate between the German writers, who maintain that they are mainly or wholly ideographic, and the French school (followed by many Americans), who look on them as largely phonetic, holding "that while chiefly ideographic, they are occasionally phonetic" ikonomatic is the term the author has applied to this system of writing, which at times is practically a rebus. The manuscripts or codices of the ancient Mayas, of which four imperfect examples are preserved, the author thinks are much more astronomical in character than even Dr. Förstemann, who has gone furthest hitherto in this interpretation, believes: "they are primarily and essentially records of the motions of the heavenly bodies; and both figures and characters are to be interpreted as referring in the first instance to the sun and moon, the planets and those constellations which are most prominent in the nightly sky in the latitude of Yucatan." This contention, Dr. Brinton ably supports by evidence that can scarcely fail to convince. It is interesting to learn that Dr. Forstemann's explanation of the 24th page of the Dresden Codex, with which Dr. Brinton agrees, indicates "that it was intended to bring the time covered in five revolutions of Venus into relation with the solar years and the ceremonial years, or tonalamatl of 260 days; also to set forth the relations between the revolutions of the moon and of Mercury; further to divide the year of Venus into four unequal parts, assigned respectively to the four cardinal points and to four divinities; and finally, to designate to which divinities each of the five Venusyears under consideration should be dedicated." What a wealth of astronomical and mythological ideas these old Americans possessed, we are only now really discovering.

The sections on the religion of the ancient Mayas, their cosmical conceptions and the representations of their gods and goddesses are supremely interesting, and here the author's acute interpretative instinct is seen at its best. Of the 950 figures of deities in the four codices, 638 (more than three-fourths) have been recognized, of which no fewer than 196 are of Itzamna, the long-nosed, snake-tongued god of life and medicine, who has many manifestations. In his exposition of the graphic elements, Dr. Brinton adds not a little to our stock of knowledge, the ingenious exposition of the "drum" signs being noteworthy. The evolution of the "hand" and "eye" signs is also well

brought out.

Altogether, this primer is a contribution to the study of American palæography, which does credit to the distinguished Americanist from whom it emanates, and saying this is to pass the best judgment upon the work. Psychologists cannot fail to find in this little volume, concerned as it is with the beginnings of literature and alphabetic writing, many things of profound and lasting interest.